

[VORTEX TUBE COOLING SYSTEM]

Abstract

Systems and methods for cooling a component within a housing adapted for subsurface disposal using a vortex tube. The housing contains a first pressure chamber; a vortex tube coupled to the first pressure chamber; a cooling chamber coupled to the vortex tube; and a second pressure chamber coupled to the cooling chamber; wherein the pressure chambers are adapted to stimulate a cool fluid flow from the vortex tube into the cooling chamber. A cooling method entails disposing the component to be cooled within the cooling chamber and adapting the system pressure chambers to stimulate a cool fluid flow from a vortex tube into the cooling chamber.